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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,491	03/15/2004	Thomas P. Low	US4825-2 (SRI-005)	9293
32836	7590	10/04/2005		
GUERIN & RODRIGUEZ, LLP 5 MOUNT ROYAL AVENUE MOUNT ROYAL OFFICE PARK MARLBOROUGH, MA 01752			EXAMINER PHAM, TOAN NGOC	
			ART UNIT 2632	PAPER NUMBER

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/800,491	<b>Applicant(s)</b> LOW, THOMAS P.	
	<b>Examiner</b> Toan N. Pham	<b>Art Unit</b> 2632	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/3/04, 10/14/04, 10/19/04</u> | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-6, 8-16 and 18-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Garner et al. (US 4,453,163).

Regarding claim 1: Garner et al. discloses a heads-up display for a propeller driven aircraft comprising a plurality of LED elements (12) disposed on a side of a propeller blade (11) substantially facing at least one occupant of the aircraft; and a graphics generator (19) controlling illumination of the LED elements on the side of the propeller blade in accordance with the rotation of the propeller to produce a graphical image that appears to the occupant of the aircraft to be superimposed on a background (col. 2, lines 10-68; Figs. 1-2).

Regarding claim 2: Garner et al. discloses the graphical image conforms to an object in the background upon which the graphical image is superimposed (col. 2, line 60- col. 3, line 35).

Regarding claim 4: Garner et al. discloses the light-emitting elements, when illuminated, produces a wide beam of light visible simultaneously to multiple occupants of the aircraft with a view of the propeller (col. 2, line 60-col. 3, line 35; Fig. 2).

Regarding claim 5: Garner et al. discloses a data processor obtaining information from aircraft sensors and generating a command based on the information for use in generating the graphical image (col. 2, lines 33-59).

Regarding claim 6: Garner et al. discloses a communication channel (14) between a processor in an airframe of the aircraft and the propeller for transferring signals between the processor and the graphics generator (col. 2, lines 24-26; Fig. 1).

Regarding claim 8: Garner et al. discloses the communication channel is a wired channel (col. 2, lines 24-26; Fig. 1).

Regarding claim 9: Garner et al. discloses the communication channel includes a slip ring (14) (col. 2, lines 24-26).

Regarding claim 10: Garner et al. discloses a processor translating electrical signals obtained from a sensor of the aircraft into a command to be sent to the graphics generator for producing the graphical image (col. 1, lines 55-67; col. 2, lines 33-59; Fig. 2).

Regarding claim 11: Garner et al. discloses a power source supplying power to graphics generator (col. 2, lines 25-68).

Regarding claim 12: Garner et al. discloses the power source is derived from the rotation of the propeller (col. 2, lines 25-59).

Regarding claim 13: Garner et al. discloses the propeller blade is a first propeller blade, and further comprising a second plurality of light-emitting elements disposed on a side of a second propeller blade of the propeller substantially facing at least one occupant of the aircraft and emitting light in accordance with the rotation of the propeller

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to produce at least one graphical image that appears to at least one occupant to be superimposed on the background (Fig. 2).

Regarding claim 14: Garner et al. discloses the at least one graphical image produced by the second plurality of light-emitting elements is redundant to the at least one graphical image produced by the plurality of light-emitting elements on the first propeller blade (Fig. 2).

Regarding claim 15: See claim 1 above.

Regarding claim 16: See claim 5 above.

Regarding claim 18: See claim 12 above.

Regarding claim 19: See claim 1 above.

Regarding claim 20: Garner et al. discloses a propeller-position sensor determining a current angular position of the propeller and communicating the current angular position to the graphics generator (col. 3, lines 18-35).

Regarding claim 21: Garner et al. discloses a light source disposed on a side of a blade of the propeller; means for determining a current rotational position of the propeller; and means for controlling illumination of the light source based on the current rotational position of the propeller (col. 2, line 60-col. 3, line 35).

Regarding claim 22: See claim 12 above.

Regarding claim 23: See claim 21 above.

Regarding claim 24: Garner et al. discloses obtaining information from instrumentation of the aircraft, and wherein the step of controlling illumination causes

display of a graphical image based on the obtained information during the rotation of the propeller (col. 2, line 33-col. 3, line 35).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garner et al. (US 4,453,163).

Regarding claim 3: Garner et al. discloses the heads-up display is directly in front of the pilot's field of view; and provides a visible and graphical image of the flight measurements of airspeed and and roll angle. Thus, the image display is to be seen only for occupant directly behind the propeller; therefore, it would be obvious that any occupant not in the direct field of view would not be able to see the display.

Regarding claim 7: Garner et al. does not disclose a wireless communication channel; however, it is well known in the art of communication devices that both wired and wireless technology are used. Therefore, it is merely a matter of design choice to have utilized either technology to better suite the invention.

Regarding claim 17: Garner et al. discloses the communication channel is a wired channel (col. 2, lines 24-26; Fig. 1). Garner et al. does not disclose a wireless communication channel; however, it is well known in the art of communication devices

that both wired and wireless technology are used. Therefore, it is merely a matter of design choice to have utilized either technology to better suite the invention.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of Berstis et al. (US 6,348,877) and Morley (US 4,743,903) are cited to show a variety of heads-up display for aircrafts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan N. Pham whose telephone number is (571) 272-2967. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J. Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 29, 2005

TOAN N. PHAM  
PRIMARY EXAMINER

